

### LISTING OF THE CLAIMS

Applicant hereby presents the claims, their status in the application, and amendments thereto as indicated:

1. (Currently amended) An optical machine-readable medium ~~for recording~~ comprising a two-dimensional bar code recognizable in bidirection, the barcode including:

an encoding region consisting of nodes arranged ~~in a to form of a~~ matrix,

an encoding information sequence is disposed sequentially ~~in two dimensions~~ on said nodes of said matrix to form a two-dimensional path having bilateral symmetry within said matrix ~~in one direction and in a reversible order, and comprises~~

a plurality of directional symbols, wherein said directional symbols are arranged at specific locations having bilateral symmetry in within said encoding information sequence, said specific locations having bilateral symmetry within said matrix, wherein said direction in which said encoding information sequence is disposed on said nodes of said matrix is identified by a combination of said specific locations and values of said directional symbols indicate a direction of said two-dimensional path within said matrix.

2. (Previously Presented) The medium as claimed in claim 1, wherein said directional symbols comprise data symbols and error-correcting symbols.

3. (Previously Presented) The medium as claimed in claim 2, wherein said directional symbols consist of symbols  $S_{11}$ ,  $S_{10}$ , ...,  $S_1$ ,  $S_0$ , STA,  $R_1$ ,  $R_2$ ,  $R_3$ ,  $R_4$ , STO,  $S'_0$ ,  $S'_1$ , ...,  $S'_{10}$ ,  $S'_{11}$ , which comply with a relationship as follow:

a symbol sequence  $\{STO, R_4, R_3, R_2, R_1, STA, S_0, S_1, \dots, S_{10}, S_{11}\}$  acts as one BCH (18, 6) error-correcting code sequence, a symbol sequence  $\{STA, R_1, R_2, R_3, R_4, STO, S'_0, S'_1, \dots, S'_{10}, S'_{11}\}$  acts as another BCH (18, 6) error-correcting code sequence, symbols STA, STO and  $R_1 \sim R_4$  are said data symbols, symbols STA, STO function as locating control characters indicating said direction,  $R_1 \sim R_4$  functions as normal information characters,  $S_0 \sim S_{11}$

and  $S'_0 \sim S'_{11}$  are said error-correcting symbols belonging to said error-correcting code sequences.

4. (Previously Presented) The medium as claimed in claim 3, wherein said directional symbols are arranged at said specific locations having bilateral symmetry in such a way that:

said directional symbols  $R_2, R_1, STA, S_0, S_1, \dots, S_{10}, S_{11}$  correspond to locations within left half part of said encoding information sequence according to a distributional rule, and said directional symbols  $R_3, R_4, STO, S'_0, S'_1, \dots, S'_{10}, S'_{11}$  correspond to locations within right half part of said encoding information sequence according to said distributional rule.

5. (Previously Presented) The medium as claimed in claim 4, wherein said distributional rule complies with an analog random discrete distribution.

6. (Previously Presented) A method for reading the optical machine-readable medium as claimed in claim 1, comprising the steps of:

(1) reading encoding information at said nodes within said matrix in one recognition direction and in said reversible order to obtain said encoding information sequence;

(2) extracting said directional symbols from said specific locations in obtained encoding information sequence; and

(3) determining said direction in which said encoding information sequence is disposed on said node of said matrix based on said combination of said specific locations and values of said directional symbols.

7. (Previously Presented) The method as claimed in claim 6, wherein said directional symbols comprise data symbols and error-correcting symbols.